

CLAIMS

1. A cover for a vacuum dewatering box, comprising:
a plurality of blocks each including a wear surface, the blocks are arranged in at least one cross direction (CD) row and are spaced apart from one another in the cross direction to form at least one generally CD oriented non-linear shaped slot through the cover, a shape and size of the at least one slot being determined by at least one of a location of and a shape of the blocks.
2. The cover for a vacuum dewatering box of claim 1, wherein the blocks are supported by at least one CD extending support.
3. The cover for a vacuum dewatering box of claim 1, wherein the wear surface of each of the blocks comprises a wear resistant element, and the wear resistant element is mounted in a support component.
4. The cover for a vacuum dewatering box of claim 1, wherein the blocks are supported by at least one CD extending support, and the blocks are aligned by at least one of a rod or a groove oriented generally parallel to the at least one longitudinally extending support.
5. The cover for a vacuum dewatering box of claim 1, wherein the cover includes first, second and third CD extending supports, a first group of the blocks are located between the first and second CD extending supports, and a second group of blocks are located between the second and third CD extending supports, at least some of the blocks of the first group are spaced apart from one another, and at least some of the blocks in the second group are spaced apart from one another and located in offset positions from the blocks of the first group.

6. The cover for a vacuum dewatering box of claim 5, wherein the blocks are arranged so that the at least one slot has a generally zigzag-shaped appearance extending in the CD.

7. The cover for a vacuum dewatering box of claim 5, wherein the blocks are arranged so that the at least one slot has a herringbone appearance extending in the CD.

8. The cover for a vacuum dewatering box of claim 5, wherein there is at least one additional CD extending support and at least one additional group of blocks located between the additional CD extending support and one of the other CD extending supports, and at least some of the blocks in the additional group are spaced apart from one another and located in offset positions from at least some of the blocks of the first or second groups.

9. The cover for a vacuum dewatering box of claim 5, wherein there is a plurality of generally CD oriented slot through the cover.

10. The cover for a vacuum dewatering box of claim 1, wherein the cover includes $2n + 1$ CD extending supports and $2n$ groups of blocks, where n is an integer greater than or equal to 1, each of the groups of the blocks are separately located between successive adjacent ones of the CD extending supports, at least some of the blocks in each of the $2n$ groups are spaced apart from one another, and at least some of the blocks in a first of the $2n$ groups of blocks are located in offset positions from at least some of the blocks of a second of the $2n$ groups of blocks.

11. The cover for a vacuum dewatering box of claim 1, wherein the box is one of a suction box or a Uhle box for a papermaking machine.

12. The cover for a vacuum dewatering box according to claim 11, wherein the fabric bearing wear surface of the blocks is formed of a ceramic material.

13. The cover for a vacuum dewatering box according to claim 11, wherein the blocks are formed entirely of a ceramic material.

14. The cover for a vacuum dewatering box according to claim 11, wherein the blocks include a ceramic coating located on a wear side.

15. A vacuum dewatering box for a papermaking machine, comprising:

a box with an interior adapted to be connected to a vacuum source, the box being adapted for installation in a cross direction (CD) across at least a portion of a papermaking machine;

a cover located on the box, the cover being formed from a plurality of blocks each including a fabric bearing wear surface, the blocks are arranged in at least one CD row and are spaced apart from one another in the CD to form at least one generally CD oriented non-linear shaped slot in communication with the interior of the box, a shape and size of the at least one slot being determined by at least one of a location of and a shape of the blocks.

16. The vacuum dewatering box according to claim 15, wherein the blocks are attached to at least one CD support by mechanical fasteners.

17. The vacuum dewatering box according to claim 15, wherein the blocks are attached to at least one CD support by at least one of bonding, welding, and adhesives.

18. The vacuum dewatering box of claim 15, wherein the fabric bearing wear surface of each of the blocks comprises a wear resistant element, and the wear resistant element is mounted in a support component.

19. The vacuum dewatering box of claim 18, wherein the support component comprises a fiberglass, stainless steel or UHMW material.
20. The vacuum dewatering box of claim 18, wherein the support component of each of the blocks includes a channel to receive the wear resistant element.
21. The vacuum dewatering box according to claim 15, wherein the blocks are arranged so that the at least one slot has a generally zigzag-shaped appearance.
22. The vacuum dewatering box according to claim 15, wherein the blocks are supported by at least one CD support, and the blocks are aligned by at least one of a rod or a groove oriented generally parallel to the at least one CD support.
23. The vacuum dewatering box of claim 22, wherein each of the blocks is supported by two of the CD supports, one of the CD supports extending along each longitudinal side of each of the blocks, the CD supports each including at least one of a longitudinally extending groove or projection, and each of the blocks including at least one of a complementary located groove or projection so that the blocks are positively engaged and held in position by the CD supports.
24. The vacuum dewatering box of claim 22, wherein the projection on the CD support is formed by a rod located in a groove in the CD support that protrudes outwardly.
25. The vacuum dewatering box according to claim 15, wherein the cover includes first, second and third CD supports, a first group of the blocks are located between the first and second CD supports, and a second group of blocks are located between the second and third CD supports, at least some of the blocks of the first group are spaced apart from one another, and at least some of the blocks in the second group

are spaced apart from one another and located in offset positions from the blocks of the first group.

26. The vacuum dewatering box of claim 25, wherein there is at least one additional CD extending support and at least one additional group of blocks located between the additional CD extending support and one of the other CD extending supports, and at least some of the blocks in the additional group are

spaced apart from one another and located in offset positions from at least some of the blocks of the first or second groups.

27. The vacuum dewatering box of claim 15, wherein there is a plurality of generally CD oriented slot through the cover.

28. The vacuum dewatering box of claim 15, wherein the cover includes $2n + 1$ CD extending supports and $2n$ groups of blocks, where n is an integer greater than or equal to 1, each of the groups of the blocks are separately located between successive adjacent ones of the CD extending supports, at least some of the blocks in each of the $2n$ groups are spaced apart from one another, and at least some of the blocks in a first of the $2n$ groups of blocks are located in offset positions from at least some of the blocks of a second of the $2n$ groups of blocks.

29. The vacuum dewatering box according to claim 15, wherein the blocks are arranged so that the at least one slot has a herringbone appearance.

30. The vacuum dewatering box according to claim 15, wherein the fabric bearing wear surface of the blocks is formed of a ceramic material.

31. The vacuum dewatering box according to claim 15, wherein the blocks are formed entirely of a ceramic material.

32. The vacuum dewatering box according to claim 15, wherein the blocks include a ceramic coating located on a wear side.

33. The vacuum dewatering box of claim 15, wherein the vacuum dewatering box is a suction box or a Uhle box for a papermaking machine.